

It is my sincere pleasure to present an article by my dear friend and fellow Knight in the Dynastic Order of Our Lady of the Conception of Vila Vicosa.

## **FREDERICK T. ZUGIBE, M.D., Ph.D.**

Dr. Zugibe was the Chief Medical Examiner of Rockland County, New York from August 15, 1969 to December 31, 2002 and Acting Medical Examiner from January 1, 2003 to March 31, 2003 pending confirmation of his successor. On August 11, 2003, the Rockland County Legislature dedicated the Rockland County Medical Examiner's Office as the DR. FREDERICK T. ZUGIBE FORENSIC UNIT.



Dr. Zugibe developed the Medical Examiner System in Rockland County, New York in 1969 and served as Rockland County's first Chief Medical Examiner for over 33 years until December 31, 2002. He holds a Bachelor of Science, Master of Science (Anatomy/Electron Microscopy), Ph.D. (Anatomy/ Histochemistry), and an M.D. degree. He is a Diplomate of the American Board of Pathology in Anatomic Pathology and Forensic Pathology and a Diplomate of the American Board of Family Practice. Dr. Zugibe is an adjunct Associate Professor of Pathology at Columbia University College of Physicians and Surgeons and is a Fellow of the College of American Pathologists, a Fellow of the American Academy of the Forensic Sciences, Forensic Pathology Section, and a member of the National Association of Medical Examiners.

Dr. Zugibe has published a definitive, widely used textbook in a specialized field of diagnostic pathology, called Diagnostic Histochemistry (C.V. Mosby Co.) which is utilized in medical centers throughout the world. He has published numerous papers and book chapters in the fields of forensic and general pathology [ PAPERS ] and has authored The Cross and The Shroud, A Medical Examiner Investigates the Crucifixion (Angelus Books), and The Cross and the Shroud, A Medical Inquiry into the Crucifixion (Paragon House). Dr. Zugibe has been consulted for his expertise by attorneys and medical examiners from throughout the United States.

Dr. Zugibe is also well known internationally in the field of cardiovascular disease. He was formerly Director of Cardiovascular Research with the Veteran's Hospital in Pittsburgh. He is a Fellow of the American College of Cardiology, Fellow of the Council on Arteriosclerosis of the American Heart Association, Fellow of the New York Cardiological Society, and Member of the International Atherosclerosis Society, and has published numerous papers and chapters in the fields of cardiovascular disease [ PAPERS ].( He has authored the best selling book Eat, Drink, and Lower Your Cholesterol (McGraw-Hill) and 14-Days to a Healthy Heart (Macmillan)( soft cover-Avon Books).

He has also authored the Blue Cross-Blue Shield booklet, The Healthy Heart Booklet, Feeling Great and Living Better.

Dr. Zugibe is the recipient of numerous awards in Medicine and Law Enforcement and Community Affairs. His biography has been listed in several of the prestigious MARQUISE, Who's Who reference books including ; Who's Who in America, Who's Who in the World, Who's Who in the East, Who's Who in New York, Who's Who in Science and Engineering, Who's Who in American Government, and Who's Who in Medicine and Healthcare. He has also been listed in American Men of Science, Leaders in American Science, Who's Who in Biblical Studies and Archeology, the International Biographical Dictionary, the International Scholar's Directory, and the International Authors and Writers Who's Who in American Government, and Who's Who in Medicine and Healthcare. He has also been listed in American Men of Science, Leaders in American Science, Who's Who in Biblical Studies and Archeology, the International Biographical Dictionary, the International Scholar's Directory, and the International Authors and Writers Who's Who.

A new disease, Glycoprotein Storage Disease first described in the prestigious, American Journal of Medicine by Dr. Zugibe and co-author, Dr. Enid Gilbert, has been named the Zugibe-Gilbert Syndrome.

"One of the Top 25 people in Rockland County who most influenced this region during the Twentieth Century." The Journal News Commemorative Edition, Dec. 31, 1999.

**Knighthood into the Dynastic Order of Our Lady of the Conception of Vila Vicosa ( founded 2/ 6/1818 ) by His Royal Highness, Dom Duarte Pio, Duke of Braganca and Titular King and Head of the Royal House of Portugal which was bestowed in recognition of great acts and services to the Royal House and the Church.**

As a media consultant, Dr. Zugibe's credits would fill several pages.

# THE CODE FOR HUMAN LIFE

Frederick T. Zugibe, M.S., M.D., Ph.D., FCAP, FACC, FAAFS

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*A fertilized human egg at the moment of Conception, is the opinion of the creator that a human life at that instant, must begin.... F. Zugibe*

The question as to when human life and personhood begins has been made a controversial issue because the proponents of abortion do not want it to begin at least before the first 24 weeks of gestation. There, however, should be no controversy because the scientific facts are incontrovertible. These facts have been obscured on both sides by individuals who do not possess the necessary education, training and experience in science to evaluate and interpret the materials and render valid conclusions or who, influenced by their religious or chauvinistic fervor have reached erroneous or untenable suppositions and conclusions, *argumentum ad hominem*. Justice Blackmun opined in *Roe P. Wade* that the determination as to when life and personhood begins is a difficult decision that the court is not in a position to speculate on and there in does not have the resolve since those trained in medicine are unable to arrive at any consensus. The U. S. Supreme Court Justices then carried their defective reasoning even further in *Roe v. Wade* when in contrast with all other civilized societies, ruled that the unborn is a non-person regardless as to whether it is a human being or not. This decision then made the unborn ineligible for the protection that is guaranteed to all human persons under the U. S. Constitution. What Blackmun and the other U. S. Justices were really saying was that maybe human life and personhood begins at conception but since we do not know for sure, we will allow abortion until someone proves differently. This is the mentality of most of the ardent supporters of abortion which is in sharp contrast to logical reasoning when applied to possible life or death situations. In the field of medicine, the proper medical diagnostic approach must proceed in a rational manner with the safety of the patient always foremost, *primum non nocere*, first do no harm. An example of this is the patient with chest pain. Here, it behooves the physician to consider chest pain as heart related until proven otherwise even though chest pain is only heart related in less than 20 % of the cases since an error in diagnosis may cause the patient his life. I have personally investigated many unfortunate cases in my role as medical examiner, where this approach was neglected by physicians and the patients subsequently died. In *Roe vs. Wade*, millions of human beings were legally murdered by the stroke of a pen. Ergo, the *Roe versus Wade* Decision should have utilized the premise, ...a human person until

proven otherwise...thereby preventing. the slaughter of millions of innocent human beings. In the words of Louis Brandeis, *"if we desire respect for the law, we must first make the law respectable"*

In recent years there has been a revolution in genetics that confirmed what geneticists and embryologists have been saying for years, that human life with all of its characteristics for a particular human being must be coded in the fertilized egg.

In 1948, Dr. Bradley Patten, one of the most distinguished embryologists in the world definitively related in his textbook ( 1 ). *"It Is the penetration of the ovum by the spermatozoon and the resulting mingling of the nuclear material each brings to the union that constitutes the culmination of the process of fertilization and marks the initiation of the life of a new individual. In the midst of the current Genetic Revolution, one of the foremost, highly honored geneticist in the world, Jerome Lejeune, M. D., Ph.D., Professor of Genetics at the University of Paris and Sorbonne, related, "...each of us has a unique beginning, the moment of conception...when the information carried by the sperm and by the ovum have encountered each other, then a new human being is defined because its own personal and human constitution is entirely spelled out. The information which is inside the first cell obviously tells this cell all the tricks of the trade to build himself as the individual this cell is already....to build that particular individual which we will call later Margaret or Paul or Peter, it's already there, but it's so small we cannot see it ...It's what life is, the formula is there; ...if you allow the formula to be expanded by itself, just giving shelter and nurture, then you have the development of the full person "*( 2).

In order to understand *why* we now know and not just infer that human life begins at the time of conception, it is important that we understand some of the fundamental concepts in genetics. Both the human spermatozoa and the human egg each contain 23 chromosomes. When the spermatozoa penetrates the ovum, the 23 chromosomes from each, arrange themselves in 23 pairs or 46 chromosomes (Fig. One).



a.



b.

Fig. One a. Chromosomes

b. Chromosomes dividing

One chromosome from each pair is from each parent. It is at this moment that both fertilization and human life begins and the cell divides into 2 cells, then 4 cells, 8 cells, 16 cells and so forth until the complete human body is formed.

The fertilized egg is called the zygote. Each chromosome is packed with a long string of deoxyribosenucleic acid commonly known as DNA. Each of these strings of DNA is composed of two tightly, intertwined, strands which comprise the spiral staircase structure discovered by Nobelists, Crick and Watson in 1953.

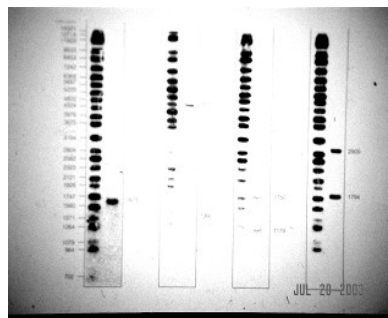


**Fig. Two. DNA SPIRAL Schematic (A-Adenine, G-Guanine, T-Thymidine, C-Cytosine)**  
 [ b.closeup c. helix dividing]

It has been estimated that If the DNA strands from one spermatozoa or ovum is stretched out and placed end to end, it would measure over 3 feet in length. These strands bear the code for human life and contain all the information necessary to construct a human being along with specific qualities unique to a specific person all lined up in precise locations along the DNA. This code is in the form of four chemical bases, *cytosine, adenine, thymidine and guanine* that are arranged in various sequences along with side chains of sugars, and phosphates which comprises each DNA strand. The *genes*, totaling over 30,000 in number are the fundamental units of heredity being made up of different chemical base sequences that are arranged along the DNA strands at precise locations- The amount of information contained on the DNA is likened to a vast biological computer program probably larger than our largest computers, yet as Dr. Lejeune pointed out, if you took all of the strands of DNA from the spermatozoa and ova that would replace every individual in the entire world, they would only add up to the size of about two aspirin tablets( 2 ). As I previously indicated, most of the genetic work in the past regarding the genetic code had been hypothetical and by inference. But in the early 1980's, the Genetic Revolution began when Botstein et al. showed that all of the genes on a DNA molecule is replete with segments of genetic information ( 3 ). Subsequently, Dr Alec Jeffreys developed a method to isolate common core sequences on the DNA for identification purposes ( 4, 5 ). The term "DNA fingerprinting" was born and now for the first time, geneticists could demonstrate that the DNA in every cell of every person contains a code unique to that individual, like the bar codes in the supermarket.



**Supermarket Barcode**



**DNA Pattern**

This bar code for every person is present in the original zygote. After Jeffrey's technique first emerged, in England, police and immigration authorities began using it for identification purposes, The first criminal application was used in the Colin-Pitchfork case noted in The Bleeding by Wambaugh ( 6 ). Jeffrey's technique known as the restricted fragment length polymorphism method (RFLP) requires a

relatively large sample size and about five weeks to perform. A few years later, another revolutionary advance, (although not as accurate as RFLP) was made that can be performed on tiny samples and in only a couple of days by amplifying specific regions of DNA, and precisely making millions of copies through a chemical reaction known as the polymerase chain reaction (PCR ) method ( 7 ). Every year the accuracy of this method has been improving. Both the RFLP and the PCR methods are currently in widespread use by law enforcement officials and by attorneys in civil paternity cases throughout the world. In my work as medical examiner, I frequently use DNA testing for identification purposes. For example, in a recent beating death, we found a subtle impression of the letters NIKE) on the victim's body whereupon careful observation revealed a sneaker impression The authorities then brought in a sneaker from a suspect which accurately matched the impression and although no visible blood was present on the sneaker, the DNA lab was able to produce millions of copies of DNA from a few blood cells that were present and match them up with a blood sample taken from the deceased victim. The suspect was subsequently convicted of murder.

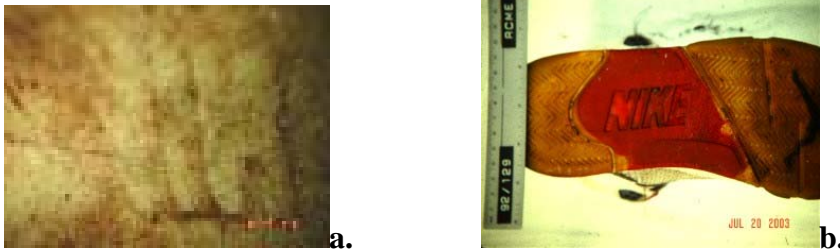


Fig. 3. "Nike" Imprint on body (reverse) Implicated Sneaker

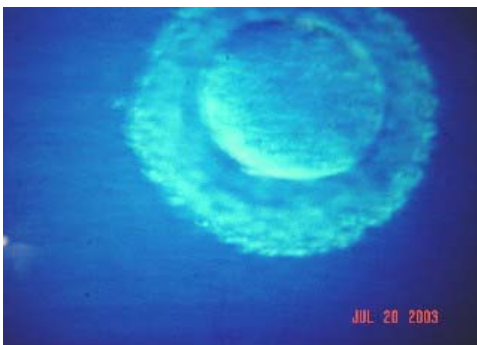
It is now an established fact that the DNA in the fertilized ovum bears the code for both human life and individuality which is passed on to every cell in the development of the embryo. Every cell, whether it be blood, brain, skin, liver, heart or any organ at any stage of existence can be typed to identify that particular human being. The important thing to remember is that *the fertilized egg or zygote contains all of the genetic material needed to create the fully expressed individual and includes inherent complex encoding for individual human interjection and all the other associated qualities characteristic of human personhood.*





Fig. 4. 32 day old embryo

We can take a single cell or zygote from a human being, a gorilla and a mouse and subject them to forensic testing and definitively identify each species. Moreover, if one or two cells were removed from a developing human embryo and either typed as to their individual specific DNA pattern or stored *away*, they could be used many years later to identify the adult individual. Currently, more and more refinements are being made in the DNA techniques with more and more precision and accuracy. Moreover, The Human Genome Project headed by Dr. Francis Collins at the National Institutes of Health has been successful in constructing a complete map of the DNA molecules with all of its over thirty thousand genes, their locations, their exact sequences and gene abnormalities that was originally scheduled to be completed by the year 2005- Harvard molecular biologist, Dr William Gilbert wrote *"We look at ourselves as having an infinite potential to recognize that we are determined, in a certain sense by a finite collection of information that is knowable will change our view of ourselves. It is the closing of an intellectual frontier with which we will have to come to terms"* (8). Some of the new information in genetics is fascinating. Recent information shows that the first cell has a greater capability or endowment for using information than all of the cells following it. When the human code is activated during fertilization, the first cell (actually 2 cells combined) carries out the design for the entire creation and is actually the most specialized cell in the complete developmental process.



a.



b.

Fig. 5. Fertilized Egg Two cell stage  
All future developmental events are encoded in the original fertilized cell As more

and more cell divisions occur, the cells are able to use less and less of the genetic information although the full gamut of information is present in every cell. This *specialization* or *differentiation* first begins at the 3 cell stage and continues **thereafter**. by a unique reaction called *methylation* where a chemical group called a methyl group is attached to certain genetic base sequences which shuts off specific genetic information in a manner likened to that of a series of switches. For example, by shutting off certain switches, some cells are designed to become liver cells and can only produce liver cells. The same is true of kidney cells, heart cells, brain cells etc. Another important area that must be addressed is the assertion by freedom of choice advocates that the conceptus is part of the mother's body and therefore she has a right to do what she wants regarding her own body. This is completely incorrect. The conceptus is a separate and distinct human being and contains its own 46 individualized chromosomes different from that of the mother throughout all stages of development. They each have a separate circulation, separate organs as brain, heart, kidneys, liver, the same or different blood types, and are of the same or different sex. The conceptus is as much a part of the father as it is of the mother. Recent studies show that the membranes that enclose the conceptus is derived from information encoded in the spermatozoa which provides for separation of the conceptus from the mother otherwise the mother's immune system would destroy the conceptus. They also allow oxygen and nutriment to pass from the mothers blood to the blood of the conceptus. If the spermatozoa is defective, a mass of unorganized tissue called a dermoid cyst containing hair, teeth, and etc. results (Fig. 6. a & b). However, if the egg is defective, just a mass of tissue resembling bunches of grapes occurs (each resembling a miniature placenta) (see Fig. 6b.)

The mother only provides *shelter, nutrition and oxygen and does not direct the development of the conceptus*. The latter is completely directed by the genetic code of the conceptus.

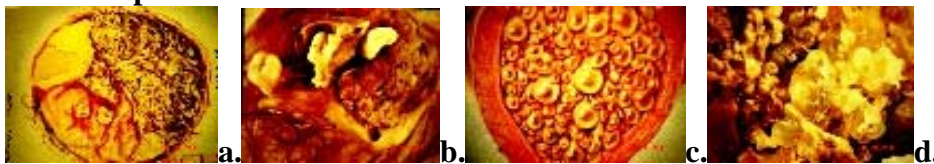


Fig. 6. Dermoid Cyst (a and b)  
(note hair and teeth)

Hydatidiform Mole (c and d)  
(note miniature placentas)

A monumental contribution was made by Dr. Foidart, a Belgian Scientist who recently provided evidence that during the first three months of development, an embryonic hemoglobin different than the fetal hemoglobin is present which extracts oxygen from a special fluid that is present in the intervillous space and not from the mothers blood ( 9 ).

Proponents of abortion argue that merely proving that the conceptus is a human being does not make it a human person. My response to them would be likened to that of Hamlet in response to Polonius' question, "*What do you read my Lord?*" "*Words, words, words.*" The simple fact is that the two terms are inseparable. A human being is a human person. It has a basic Inherent capacity to function rationally but lacks the present immediate capacity to function rationally ( 10 ).



Still, the courts constantly utilize the premise that an unborn child regardless of whether he or she is a human being is not a person and therefore has no rights under the Constitution. The laws in New York State and most other states, all embrace the principle that you are a non-person unless you are born. I call this the idiot principle because it even includes full term infants right up to the moment of birth. Our office and other medical examiner's offices have investigated cases where full term babies were killed *in utero* by various types of trauma and yet no homicide charges were made because *the baby was not born*. Two cases in point include a case where a lady intentionally kicked a full term pregnant lady in the abdomen to kill her baby and a case where a man fired a bullet into the abdomen of a full term woman, killing the infant. In both cases only assault charges were made against the perpetrators. Many pro-abortionists utilize the definitions from Descartes and other philosophers who define a person as *someone who acts rationally, is self-conscious, is self-aware, and sentient*. Some pro-abortionists like Peter Singer, the founder of the animal rights movement go so far as to argue that non-human animals like chimpanzees, dogs or pigs are more rational, self-conscious, more aware and sentient than a human baby a week, a month or even a year old and therefore it appears that the latter are of less value than the life of these animals thus alluding that newborn babies should be used for experimentation before these animals. ( 11 ). If the personhood principle depends on rationality, awareness, self-consciousness, then we are in deep trouble because this would exclude full term fetuses, newborn infants, infants perhaps up to two years old, the markedly retarded, patients with organic mental syndrome. Alzheimer patients and patient's with cerebral trauma who are in coma. Since the personhood principle pervades the court system, one can readily see how euthanasia can gain easy entrance. In 1907, *Oliver Wendell Holmes put things in proper perspective when he said "The great act of faith is when a man decides he is not God" and to borrow a phrase from William Shakespeare. "Woe to the hand that shed this costly blood"....the hand(s) that signed the Roe vs Wade Death Warrant.*

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